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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/578,525

05/08/2006

Taro Kizu

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EXAMINER

FOGARTY, CAITLIN ANNE

ART UNIT

PAPER NUMBER

1793

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/578,525	Applicant(s) KIZU ET AL.	
	Examiner CAITLIN FOGARTY	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/8/2006, 10/24/2007, 1/22/2008, 3/4/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1 – 6 are pending and presented for this examination.

Information Disclosure Statement

2. The information disclosure statements (IDS) were submitted on May 8, 2006, October 24, 2007, January 22, 2008, and March 4, 2008. These submissions are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner. Please refer to applicant's copy of form PTO-1449 submitted herewith.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1 - 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al. (US 2003/0111144).

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With respect to instant claims 1 – 3, Matsuoka et al. teaches a high-strength thin steel sheet (see Examples 2-4 and 6) with an overlapping composition ([0017]-[0024]) as seen in the table below.

Element	Instant Claim 1 (mass %)	Matsuoka et al. (mass %)	Overlapping Range (mass%)
C	0.02 – 0.15	≤ 0.15	0.02 – 0.15
Si	≤ 1.5	≤ 2.0	≤ 1.5
Mn	1.5 – 4.0	≤ 3.0	1.5 – 3.0
P	≤ 0.05	≤ 0.1	≤ 0.05
S	≤ 0.01	≤ 0.02	≤ 0.01
Al	≤ 1.5	≤ 0.1	≤ 0.1
N	≤ 0.01	≤ 0.02	≤ 0.01
Nb	0.02 – 0.40	≤ 0.2	0.02 – 0.2
Fe + impurities	Balance	Balance	Balance

Matsuoka et al. also teaches that the steel sheet has a texture comprising a ferrite phase as a main phase forming a composite structure with a secondary phase containing martensite phase in an area ratio of 2% ([0017]) which is within the limitations recited in claim 1. Furthermore, Matsuoka et al. discloses specific examples of steel alloys that are within the compositional ranges recited in instant claim 1 with tensile strengths not less than 590 MPa. See Table 4 Steels I, M, and S, Table 7 Steel 2D, Table 10 Steels 2I, 2M, 2S, and 2T, Table 16 Steels 3I, 3J, 3M, 3S, and 3T and the corresponding steels in Tables 6, 9, 12, and 18.

Matsuoka et al. does not teach the recited equations (1) and (2), however it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 553 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of the proportions of elements would appear to require no more

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than routine investigation by those ordinary skilled in the art. In re Austin et al., 149 USPQ 685, 688. Matsuoka et al. also does not teach that the steel alloy is a high-stiffness steel sheet or that it has a Young's modulus of not less than 225 GPa.

However, since the composition of the steel alloy of Matsuoka et al. overlaps with the composition of the steel alloy recited in claim 1 and the steel alloy is made with a similar process (see rejection below), it would be expected that the steel alloy of Matsuoka et al. would inherently have high-stiffness and a Young's modulus of not less than 225 GPa. See MPEP 2112 III and IV.

In regards to instant claim 2, Matsuoka et al. teaches that the steel alloy may also contain 0.2 mass% or less Ti or V which overlaps with the range recited in instant claim 2. Matsuoka et al. does not teach the recited equations (3) and (4), however it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art as discussed above.

Regarding instant claim 3, Matsuoka et al. teaches that the steel alloy may also contain Cr: 2.0 mass% or less, Ni: 2.0 mass% or less, Mo: 2.0 mass% or less, or Cu: 0.5 - 3.0 mass% which all overlap with the range recited in instant claim 3.

Since the claimed compositional ranges of instant claims 1 – 3 either overlap or are within the ranges disclosed by Matsuoka et al., a prima facie case of obviousness exists. See MPEP 2144.05. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select the claimed steel alloy composition from the steel alloy composition disclosed by Matsuoka et al. because Matsuoka et al. teaches the same utility (i.e. a automobile body parts) in the whole disclosed range.

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6. Claims 4 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matsuoka et al. (US 2003/0111144) in view of the machine English translation of JP 05-255804 from the IDS (hereafter JP '804).

With respect to instant claim 4, Matsuoka et al. teaches a method for producing a high-strength thin steel sheet (see Examples 2-4 and 6) with an overlapping composition as discussed in the table above for instant claim 1. Furthermore, Matsuoka et al. discloses specific examples of steel alloys that are within the compositional ranges recited in instant claim 4. See Table 4 Steels I, M, and S, Table 7 Steel 2D, Table 10 Steels 2I, 2M, 2S, and 2T, Table 16 Steels 3I, 3J, 3M, 3S, and 3T. The method of Matsuoka et al. includes hot-rolling a steel slab with a finish rolling end temperature of 900°C and a coiling temperature of 600°C into hot-rolled steel sheets with a thickness of 4.0 mm. The hot-rolled steel sheets are then subjected to pickling and cold-rolling to a thickness of 1.2 mm at a cold rolling reduction of 70%. Then recrystallization annealing is carried out at 800°C (see Example 4).

Matsuoka et al. does not teach that the steel alloy is a high-stiffness steel sheet. However, since the composition of the steel alloy of Matsuoka et al. overlaps with the composition of the steel alloy recited in claim 4 and the steel alloy is made with a similar process, it would be expected that the steel alloy of Matsuoka et al. would inherently have high-stiffness. See MPEP 2112 III and IV. Matsuoka et al. also does not teach the recited equations (1) and (2), however it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art as discussed above for instant claim 1. Furthermore, Matsuoka et al. also does not

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disclose that a total rolling reduction below 950°C is not less than 30% and after cold rolling the temperature is raised to 780-900°C at a temperature rising rate from 500°C of 1-40°C/s to conduct soaking and then cooling at a cooling rate of up to 500°C of not less than 5°C/s to conduct annealing.

JP '804 teaches a method of making a cold-rolled steel sheet excellent in formability and rigidity containing C, Mn, Al, Nb, and Ti. The method includes hot-rolling from 50 mm thickness to 4 mm thickness with a reduction of 92% and finish rolling at a temperature of A_{r3} -930°C which overlaps with the recited range in instant claim 4. Then the steel sheet is subjected to pickling and cold rolling. Next, the temperature is raised to 820°C at a temperature raising rate of 20°C/s to conduct soaking. Finally, the sheet is cooled at a cooling rate of 20°C/s to conduct annealing (see Example in JP '804). It would have been obvious to one of ordinary skill in the art to incorporate the hot-rolling reduction, temperature raising after cold rolling, and cooling rate steps of the method of JP'804 into the method of Matsuoka et al. to develop {211}<011> orientation of C in the steel in order to increase the Young's modulus of the steel (see [0011] in JP '804).

In regards to instant claim 5, Matsuoka et al. teaches that the steel alloy may also contain 0.2 mass% or less Ti or V which overlaps with the range recited in instant claim 5. Matsuoka et al. does not teach the recited equations (3) and (4), however it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art as discussed above.

Regarding instant claim 6, Matsuoka et al. teaches that the steel alloy may also contain Cr: 2.0 mass% or less, Ni: 2.0 mass% or less, Mo: 2.0 mass% or less, or Cu: 0.5 - 3.0 mass% which all overlap with the range recited in instant claim 6.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1 – 6 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 – 6 of copending Application No. 10/578,524. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant application claims a high-stiffness high-strength thin steel sheet with an overlapping composition with the steel sheet composition claimed in 10/578,524. The instant application also claims a method for producing the steel sheet that is very similar to the method for producing the steel sheet claimed in 10/578,524. It would have been obvious to one of ordinary skill in the art to select the composition and method of making the steel sheet from the composition and method of making the steel sheet recited in 11/578,524 because both steel sheets are used to make structural members for automobiles.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to CAITLIN FOGARTY whose telephone number is (571)270-3589. The examiner can normally be reached on Monday - Friday 8:00 AM - 5:30 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Roy King/
Supervisory Patent Examiner, Art
Unit 1793

CF